

USSR

BRAGIN, D. Ya., SHKANOV, I. N., VASIL'YEV, G. V.

"Problem of Designing Bolt Joints Under Conditions of Stress Relaxation and Creep with Vibrations"

Tr. Kazan. Aviats. In-ta [Works of Kazan Aviation Institute], No 136, 1971, pp 34-41, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 V664 by V. S. Namestnikov).

Translation: Results are presented from experiments on relaxation of stresses in bolt joints of three heat-resistant steels with and without vibration and empirical formulas describing the results produced are presented.

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USSR

UDC 621.039.51

VASIL'EV, G. YA., KONOPLEV, K. A., and SEMENOV, YU. P.

"Measurement of Total Fluxes of Thermal and Fast Neutrons in the Active Zone and in the Experimental Channels of the VVR-M Reactor"

Moscow, Metrology of Neutron Radiation on Reactors and Accelerators, 71, p 113
(from RZh-Yadernyye Reaktory, Otdel'nyy Vypusk, No 1, 1972, Abstract No 1.50.109)

Abstract: Methods and results of measuring total fluxes of thermal neutrons of from 10^{16} to 10^{21} neutr/cm² when activating Co-59 and Fe-58 by the (n, γ) reaction and fluxes of fast neutrons of from 10^{16} to 10^{21} neutr/cm² when activating Fe-54 by the (n, p) reaction are examined.

USSR

UDC 624.131+539.215

VASIL'YEV, I. M., GREBNEV, K. K. and VENKATACHALAM, G.

"Calculation of the Three-Dimensional Stability of Uniform Slopes of Earth Dams"

Moscow, vses. konf. Metody opredeleniya napryazh. sostoyaniya i ustoychivosti vysokonaporn. gidrotekhn. sooruzh. i ikh osnovaniy pri statich. i dinamich. nagruzkakh. Tezisy dokl. (All-Union Conference on Methods of Determining the Stress Condition and Stability of High-Pressure Hydraulic Engineering Structures and Their Foundations Under Static and Dynamic Loading. Thesis Report, Collection of Works), 1972, pp 313-322 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4V806 by G. A. Lipson)

Translation: A method of calculating the spatial stability of slopes according to the scheme of a nonolithic body of collapse is proposed, for which the safety factor is determined by the ratio

$$K = \frac{\tan \phi_D}{\tan \phi_K} = \frac{C_D}{C_K}$$

where ϕ_K , C_K are the critical stability characteristics at the moment of limit equilibrium; ϕ_D , C_D are the actual stability characteristics. The form of the surface slipping of the body of collapse can be described by the equation of the 1/2

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VASIL'YEV, I. M., et al., Vses. konf. Metody opredeleniya napryazh. sostoyaniya i ustoychivosti vysokonaporn. gidrotekhn. sooruzh. i ikh osnovaniy pri statich. i dinamich. nagruzkakh. Tezisy dokl. 1972, pp 313-322

curve $l=d(x/b)^n$ where d is the maximal depth of entrainment of the body of collapse; b is the maximal half width of the body of collapse; n is the index of calculation of the most dangerous form of the surface. A system for conducting calculations is demonstrated, allowing calculation of the additional load from the seismic force, filtration etc., which make the proposed method for ground slopes with uniform ratios C and ϕ more complete and economical.

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USSR

UDC 621.314.14

ZHARKOV, S. A., VASIL'YEV, I. M., PEREPECHAYEV, V. V., SIDORENKO, A. V., and KHOKHLOVA, M. M., Leningrad Institute of Aircraft Instrument Building

"A Wide-Band Instrument for Converting the Current of Semiconductor Nuclear Emission Detectors to a Pulse Train"

Moscow, Pribory i Tekhnika Eksperimenta, No 4, Jul/Aug 71, pp 101-103

Abstract: The authors describe a wide-band circuit for converting the current of semiconductor detectors of nuclear emission to a pulse train. The circuit is based on the equivalent of a four-layer diode. Stabilization of the bias on the control electrode made it possible to extend the dynamic range of data conversion by a factor of approximately 20, as well as to reduce the number of circuit elements and the required electrical energy. The device is simple, low in cost, has small overall dimensions and low weight (volume of no more than 100 cc, weight less than 50 g), and is highly shock resistant. The small number of elements ensures high circuit reliability, and enables accommodation in a hermetically sealed casing along with the power supply. The power for the entire converter can be supplied by low-voltage batteries (12-16 V). A distinguishing feature of the device is that the electrical energy requirement is proportional to the emission dose rate. In the absence
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ZHARKOV, S. A., et al., Pribory i Tekhnika Eksperimenta, No 4, Jul/Aug 71, pp 101-103

of radiation, the circuit takes practically no electrical energy. At a dose rate of 10^4 r/hr, the power consumption is 0.08 W, while the corresponding figure for 1 r/hr is 0.005 W -- 1.5-2 orders of magnitude less than the most economic conventional pickups. The prf is a nearly linear function of dose rate in the range from 10 to 10^4 r/hr. The circuit has excellent operational stability. Drift of the frequency emitted by the circuit when the detector was replaced by an equivalent resistor at constant temperature was no more than +0.02% in five days of operation.

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USSR

UDC 536.422

VASIL'YEV, I. N., TRELIN, Yu. S., and ROMANOV, A. A.

"Experimental Data on the Speed of Sound in Saturated and Superheated Cesium Vapor Up to 1280°K"

Moscow, Teplofizika Vysokikh Temperatur, Akademiya Nauk SSSR, Vol 9, No 1, Jan-Feb 1971, pp 59-66

Abstract: The following method of measuring the speed of sound in cesium vapor was used. 20 gram of distilled liquid cesium was introduced into the vapor generator of the measuring chamber. Absence of gas in this chamber was checked ultrasonically. The vapor temperature was measured by thermocouples. The vapor pressure was determined by measuring the vapor temperature close to the liquid surface. The speed of sound was measured acoustically by the method described in an article by the same authors in the same journal, No 6, 1969, p 7.

The experimental data were correlated by the least squares method.

An analytical expression of the speed of sound as a function of temperature and pressure has been worked out.

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USSR

VASIL'YEV, I. N., et al., Teplofizika Vysokikh Temperatur, Akademiya Nauk SSSR, Vol 9, No 1, Jan-Feb 1971, pp 59-66

The experimental and correlated data for different pressures and temperatures are presented in tables and graphs in the range of temperatures from 825 to 1280°K, pressures from 0.25 to 10.2 atmospheres.

The speeds of sound were also calculated from the equation of state for a mixture of mono-atomic and biatomic vapor. The agreement with the experimental data is within 2%.

VASIL'YEV, I. S.

SO:JPRS 54539
23 NOV 71

UDC: 612.017.1.014.482

SPECIFIC IMMUNITY TO SMALL DOSES OF GAMMA RAYS IN DOGS AFTER 2-4-YEAR EXPOSURE
(IMMUNOLOGICAL AND IMMUNOCHEMICAL ANALYSIS)

[Article by I.V. Kuznetsova, A.S. Skryabin, V.M. Zemtsov, Yu.K. Vyskvetlov,
I. Iokov, I.S. Vasil'yev, I.S. Zhukov, I.S. Zhukov, Moscow, Vostok Akademii Meditsinskikh
Nauk SSSR, Moscow, No 10, 1971, pp 122-29]

Galactic cosmic irradiation the cumulative dosage of which, according to estimates, could constitute 50-100 rem (roentgen equivalent man) over a one-year flight and acute recurrent exposure to solar corpuscular irradiation in a dosage of 5-50 rem per burst (V.G. Bobkov et al.; Schaefer) are factors that are continuously present during prolonged space flights. The prognosis of man's condition under these conditions and substantiation of levels of permissible exposure of cosmonauts during prolonged space flights constitutes a rather complex problem.

The mechanisms of onset of radiation sickness after exposure to relatively large doses of ionizing radiation have been studied in numerous investigations. There are many works dealing with immunological reactivity under such conditions, and they have been summarized in monographs and textbooks (N.V. Petrov; S.N. Klumparskaya et al.; V.I. Troitskiy et al., and others). Yet the changes in immunological processes in the organism referable to exposure to small doses of ionizing radiation have not been investigated sufficiently.

It has been demonstrated that 4-5 months after fractional or continuous exposure to 1.5-3.5 rem daily there is a significant decrease in immunity to infections (P.M. Kiselov and P.A. Suzin; D.A. Kaulen; E.K. Dehikidze).

In the present investigations, some manifestations of specific immunity were analyzed during a unique complex chronic experiment.

A large group of dogs has been continuously exposed to gamma rays (cobalt 60) for several years. For the first three years of the experiment the animals were exposed to radiation such as could be present for the crew of a spacecraft during a flight from the earth to Mars and back to earth, provided the radiation conditions are relatively stable ("calm") (Yu.G. Grigor'yev et al.)

USSR

VASIL'YEV, I. Ya., NIKULIN, V. N.

"Study of the Adsorption of Ions of Certain Elements in Groups I-VIII on Surface (111) of Semiconductor Monocrystals"

Tr. Kazan. Khim.-tekhnol. In-ta [Works of Kazan Institute of Chemical Technology], No 46, 1971, pp 154-163 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 B1499 from the Resume).

Translation: The method of radioactive indicators is used to study the adsorption of Ag, Au, Zn, Cd, Hg, In, Cr, Ge, Sn, As, Sb, Se, Ti, Fe and Co ions on surface (111) of germanium, indium antimonide and indium arsenide monocrystals and on surface ($\bar{1}\bar{1}\bar{1}$) of indium antimonide and indium arsenide monocrystals following etching and washing. It is demonstrated that the adsorption of Ag, Au, Cd, Hg, Se and Te ions can reach several dozens of monolayers, whereas Ge, As and Co do not even form one monolayer. The remaining elements studied form a monolayer when adsorbed. It is also established that the adsorption of ions increases with increasing washing time.

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1/2 024
UNCLASSIFIED
TITLE--NEUTRON ACTIVATION DETERMINATION OF TRACE IMPURITIES IN HIGHLY PURE
GERMANIUM -U- PROCESSING DATE--04DEC70
AUTHOR--(03)-RAZUMOVA, G.N., SHUBA, I.D., VASILYEV, I.YA.
COUNTRY OF INFO--USSR
SOURCE--RADKOKHIMIYA 1970, 12(1), 133-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--GERMANIUM, ULTRAHIGH PURITY METAL, HIGH PURITY METAL, NEUTRON
ACTIVATION ANALYSIS, GAMMA SPECTROMETER, SPECTROMETRY, METAL IMPURITY,
ANION EXCHANGE RESIN, CATION EXCHANGE RESIN, GOLD, CADMIUM, ZINC,
MERCURY/(U)AV17 ION EXCHANGE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0120
STEP NO--UR/0186/70/012/001/0133/0137
CIRC ACCESSION NO--AP0132413
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132413

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A 0.2 G SAMPLE OF HIGH PURITY GE WAS IRRADIATED IN A FLUX OF 1.2 TIMES 10 PRIME13 NEUTRONS-CM PRIME2 SEC TO AN INTEGRATED DOSE OF 8.6 TIMES 10 PRIME17 NETURONS; SAMPLES OF THE IMPURITIES TO BE DETD. WERE ALSO IRRADIATED IN THE SAME FLUX FOR THE SAME TIME. THE GE SAMPLE WAS THEN DISSOLVED IN A 1:1:1 HCL-HNO SUB3 H SUB2 O MIXT. AND SMALL AMTS. (SIMILAR TO 10 PRIME NEGATIVE6 10 PRIME NEGATIVE4 G.) OF THE ELEMENTS TO BE DETD. WERE ADDED TO THE SOLN., TO SERVE AS CARRIERS. THE AU PRESENT IN THE SOLN. WAS THEN ISOLATED BY SORPTION ON THE AV-17 RESIN IN THE CLO SUB4 PRIME NEGATIVE FORM, AND ALL OTHER IMPURITIES WERE SEPD. BY CONVENTIONAL ION EXCHANGE CHROMATOG. ON CATIONIC RESINS; THE CONCNS. OF IMPURITIES WERE THEN DETD. BY GAMMA SPECTROMETRY. THE SENSITIVITY OF THE METHOD (FOR A 0.2 G SAMPLE) WAS OF THE ORDER OF 10 PRIME NEGATIVE6 G FOR FE; 10 PRIME NEGATIVE7 G FOR CD, ZN, AND HG; 10 PRIME NEGATIVE8 G FOR AS; 10 PRIME NEGATIVE9 G FOR SB; AND 10 PRIME NEGATIVE10 G FOR AU AND CU.

UNCLASSIFIED

USSR

UDC 632.9:633.11

VASIL'YEV, K. A.

"Protection of Wheat Against the Gray Grain Moth"

Moscow, Zashchita Rasteniy, No 5, 1971, pp 29-32

Abstract: Following a detailed description of the biological characteristics of the moth and means of determining the extent of its infestation of crops, the following control measures are recommended to hamper the reproduction of the pest and limit its range of activity: (a) late sowing of wheat seeds (after 17-20 May) in years with a warm spring; (b) early harvesting of crops and prompt plowing under of residues; (c) leaving most heavily infested fields under bare fallow; and (d) spraying with metaphos or chlorophos in an amount of 2 kg/ha in 25 or 50 liters of water, metaphos or chlorophos kills about 93% of caterpillars. Spraying should be started as soon as the third instar caterpillars appear. The gray grain moth is one of the most dangerous wheat pests in Northern Kazakhstan and adjacent regions of the RSFSR.

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VASIL'YEV, K.P.

11/18/56-231
Soviet 22 Aug 1972

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Hydro-meteorology

METHODS OF CALCULATING THE MOST ADVANTAGEOUS ROUTING FOR SHIPS
Article by Candidate of Physical and Mathematical Sciences K. P. Vasil'yev
USSR Hydrometeorological Scientific Research Center, Moscow, *Gidrometeorologiya i
Gidrofizika, Moscow*, No 6, 1972, submitted 15 December 1971, pp 63-67

UDC 531.46.09

Methods of calculating the most advantageous routing for ships in the seas and oceans by the climatic aids are discussed. A procedure is presented for calculating the mean values of the hydrometeorological parameters having the same value of for the operation of calculating the optimal time interval of the stock is described.

The concept of the "most advantageous routing" is not a new one arising in recent years. In various versions this concept runs through the entire history of navigation. Since ancient times, navigators have been advised to take into account the wind, currents, ice, and so on) and the recommendations were generated off the coast of North America brought mail from Portsmouth to New York two weeks later than the American sailors using the favorable current for the crossing.

In the middle of the nineteenth century, Lieutenant of the American fleet N. Perry, considering the importance of the effect of wind and currents on the trip time, compiled wind and current charts for the oceans in Perry's time. The utilization of these maps in maritime practice permitted a significant reduction in the time spent on ocean voyages, for example, the New South-Australia crossing was cut by 20 days.

In more recent times, hydrometeorological aids (atlases, maps, and so on) have appeared which permit selection of the most advantageous routes for various areas of the year considering the variability of the hydrometeorological parameters. Later, the so-called Time Charts containing the required hydrometeorological data for ocean navigation came to be published monthly as a supplement to the atlases.

Phys- hydro meteorology

1/4 . 028
TITLE--OCEANOGRAPHY FROM SPACE -U- UNCLASSIFIED
AUTHOR--VASILYEV, K.P. V
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, ZEMLYA I VSELENNAYA, NO 1, 1970, PP 40-43
DATE PUBLISHED--70
PROCESSING DATE--09OCT70
SUBJECT AREAS--METHODS AND EQUIPMENT, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--OCEANOGRAPHY, TV PHOTOGRAPHY, SPACEBORNE EARTH PHOTOGRAPHY,
COLOR PHOTOGRAPHY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1993/1933
STEP NO--UR/0384/70/000/001/0040/0043
CIRC ACCESSION NO--AP0114364
UNCLASSIFIED

2/4 028

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114364

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TELEVISION IMAGES OF THE CLOUD COVER AND THE SURFACE APPEARING ON BLACK AND WHITE PHOTOGRAPHS AND COLOR PHOTOGRAPHS OF THE OCEAN SURFACE OBTAINED FROM SPACESHIPS AND AUTOMATIC INTERPLANETARY PROBES ARE BEING USED SUCCESSFULLY FOR SOLVING SCIENTIFIC PROBLEMS AND PREPARING HYDROLOGIC FORECASTS. RESEARCHERS AND FORECASTERS ARE ABLE TO OBTAIN ON A REGULAR BASIS TRADITIONAL INFORMATION ON ZONES OF STORM INDUCED WAVES AND ON ICE CONDITIONS OVER EXTENSIVE AREAS OF THE OCEAN AT A SINGLE MOMENT OF TIME. NEW POSSIBILITIES ARE AFFORDED FOR STUDYING THE WAVE FIELD, ICE DRIFT, ZONES OF DENSER AND THINNER ICE, DISTRIBUTION OF WATER MASSES, POSITION OF CURRENTS AND EMERGENCE OF DEEP WATERS ON THE SURFACE. HOWEVER, IT IS RATHER DIFFICULT AND FREQUENTLY IMPOSSIBLE TO DISTINGUISH ICE FROM DENSE CLOUD COVER. IN THESE CASES IT IS SOMETIMES USEFUL TO HAVE SUCCESSIVE PHOTOGRAPHS OF THE SAME REGION OVER A PERIOD OF SEVERAL DAYS. BY HAVING A SERIES OF SUCCESSIVE PHOTOGRAPHS IT IS POSSIBLE TO CHANGE THE BOUNDARIES OF THE ICE COVER IMAGE. IF THE BOUNDARY CHANGES INSIGNIFICANTLY IT CAN BE RELIABLY CONSIDERED THE ICE EDGE BECAUSE CLOUDS ARE MORE MOBILE THAN ICE. LESS DENSE, TRANSLUCENT CLOUDS DO NOT IMPEDE DETERMINATION OF THE POSITION OF THE EDGE OF FIXED ICE (SHORE ICE) AND PACK ICE OF LITTLE MOBILITY. JOINT ANALYSIS OF PHOTOGRAPHS OF CLOUD VORTICES OVER THE OCEAN AND WAVE MAPS REVEAL A CLOSE CORRELATION BETWEEN THE VORTICAL STRUCTURE OF CLOUD COVER AND THE ZONE OF STORM INDUCED WAVES.

UNCLASSIFIED

3/4 028

CIRC ACCESSION NO--AP0114364

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--AT THE TIME OF SATELLITE DETECTION OF THE VORTICAL STRUCTURE OF THE CLOUD SYSTEM OVER A CERTAIN REGION OF THE OCEAN WAVES ARE FORMED ON THE WATER SURFACE UNDER THE INFLUENCE OF THE WIND IN A YOUNG CYCLONE. THE WAVE FIELD ASSUMES A CIRCULAR FORM ELONGATED IN THE DIRECTION OF THE WIND AND SITUATED TO THE WEST OF CENTER OF THE YOUNG CYCLONE IF THE CYCLONE IS MOVING FROM WEST TO EAST. THE HEIGHT OF WAVES IN SUCH A ZONE OFTEN ATTAINS 3-4 M, THE ZONE EXTENDS FOR 300 MILES AND ITS WIDTH IS 200 MILES. THEN THE CYCLONE IS DEEPEMED AND INCREASED IN AREA. WIND WAVES RAPIDLY INCREASE, THE AREA OF THE WAVE COVERED SURFACE INCREASES AND COVERS EXTENSIVE REGIONS OF THE OCEAN. THIS STAGE IN DEVELOPMENT OF A CYCLONE CONSISTS OF SEVERAL PHASES, EACH OF WHICH IS CHARACTERIZED BY A DEFINITE CLOUD COVER STRUCTURE AND CORRESPONDING WIND FIELD STRUCTURE AND ALSO A DEFINITE ZONE OF WIND WAVES. DURING THE FIRST STAGE THE PHOTOGRAPH SHOWS THE VORTICAL STRUCTURE OF THE CYCLONE. THE HEIGHT OF WIND WAVES IN THE ZONE BENEATH THE VORTEX INCREASES TO 5-7 M. THE ZONE IS 100-150 MILES TO THE LEFT OF CENTER OF THE CLOUD VORTEX. IT HAS A CIRCULAR FORM, ELONGATED IN THE DIRECTION OF THE WIND, 500 MILES IN LENGTH AND 350 MILES IN WIDTH. IN THE NEXT STAGE OF CYCLONE DEVELOPMENT THERE IS A FURTHER MERGING OF WARM AND COLD FRONTS. IN THIS CASE THE TELEVISION PHOTOGRAPH CLEARLY SHOWS A CLOUD BAND WHICH TWISTS AROUND THE CENTER OF THE VORTEX. IN THIS STAGE OF CYCLONE DEVELOPMENT A SEVERE STORM IS OBSERVED IN THE OCEAN. WIND WAVES ATTAIN A MAXIMUM HEIGHT (8-12 M); THE STORM ZONE IS 1,000 MILES IN LENGTH AND 700 MILES IN WIDTH.

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114364
ABSTRACT/EXTRACT--IT LIES TO THE SOUTHWEST OF THE VORTEX CENTER AT A
DISTANCE OF 200 MILES AND HAS THE FORM OF AN ELLIPSE EXTENDING IN THE
DIRECTION OF THE WIND. IN THE NEXT STAGE THE CYCLONE DEGENERATES. ON
THE PHOTOGRAPH THE CLOUD SYSTEM ASSUMES THE FORM OF A VORTEX WITH
SEVERAL LOOPS AROUND THE CENTER OF THE CYCLONE. THE ZONE WHERE WAVES
WITH A HEIGHT OF 4-5 M PREDOMINATE COVERS EXTENSIVE AREAS AS A RESULT OF
PROPAGATION OF SWELL.

UNCLASSIFIED

VASIL'YEV, K. P.

Hydrometeorology

MAKING HYDROLOGIC PROGRESSES

UDC 551.40947.05-43.73

Article by Candidates of Physical and Mathematical Sciences K. P. Vasil'yev and G. V. Kargin, USSR Hydrometeorological Scientific Research Center, State Oceanographic Institute, Moscow, Meteorologiya i Gidrometeorologiya, No 12, 1972, submitted 9 August 1972, pp 39-40

A survey is presented of the Scientific Research performed in the USSR in the field of marine hydrologic forecasts.

Until the beginning of the 1920's, there were no scientifically-based methods of marine forecasting, and it is possible only to mention a procedure for determining the position of the edge of the ice in the Bering Sea proposed in 1913 by E. F. Iengst and the forecast of ice conditions in the Vilkitskiy Strait compiled in 1916 by B. P. Mulinovskiy for the Taymyr and Vaygachy.

The first steps of Soviet marine science are connected with the papers of the great Soviet scientists L. S. Bergh, K. N. Derjugin, N. N. Kalpevich and N. M. Shokalskiy. Their authority and organizational efforts helped during the first years of Soviet power to perform marine research and, above all, to investigate the invariability of individual elements of the sea and the development of marine forecasting methods.

In 1923 the first results of the studies for the development of methods of long-range ice forecasting were published. Thus, the papers by V. Yu. Vize on forecasting the ice conditions of the Bering Sea, the seas of the White Sea of ice based on the methods of "world weather" and basic physical and statistical bases for the statistical relations, V. Yu. Vize arrived at the conclusion that the accumulated observation data did not permit the entire complex chain of processes relating the factors taken as arguments to the predicted phenomena to be traced.

A significant event in the development of marine research was the second International Polar Year in 1932. Thanks to this event, new extraordinarily

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USSR

UDC: 621.791.94:621.387.143

VASIL'YEV, K. V., Candidate of Technical Sciences, and KOKHLIKYAN, L. O., Engineer,
All-Union Scientific-Research Institute of Gas Welding and Cutting Machinery

"The Cast Section of the Thermal Effect Zone and the Hydromechanics of Plasma-Arc
Cutting"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 73, pp 32-36

Abstract: The authors study the microhardness, structure, and chemical composition of the metal in the cast section of the thermal effect zone in the plasma-arc welding of low-carbon steel. It is shown that the cast section is formed as the result of the thermal effect and the hydromechanical processes associated with cutting. A hydromechanical model is proposed for plasma-arc cutting along with equations for describing the regularities associated with determining the nature of the effect of cutting conditions on the depth of the cast section.

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USSR

UDC 661.3:621.791.94

VASIL'YEV, K. V., Candidate of Technical Sciences

"Scientific-Technical Seminar on Modern Thermal Cutting"

Moscow, Svarochnoye Proizvodstvo, No 7, Jul 70, p 59

Abstract: A scientific-technical seminar on "Modern Thermal Cutting" was conducted jointly by the Moscow House of Scientific and Technical Propaganda and the Moscow City Administration of the Scientific and Technical Society of the Machine-Building Industry on 25-26 March 1970. The purpose of the seminar was to acquaint industrial personnel with the newest achievements in thermal cutting technology and to ensure an exchange of data on the latest experience among specialists of the country's leading enterprises. A. N. Shashkov, Director of the All-Union Scientific Research Institute for Autogenous Machinery, stressed the importance of thermal cutting and its role in metal processing, and also the value of gas-flame, plasma-arc, air-arc, and oxygen-flux cutting processes as valuable production processes. A number of reports were devoted to plasma-arc cutting. Of special interest was the report on new equipment for plasma-arc and oxygen cutting presented by M. D. Koltynyuk of the Odessa "Autogenous Machinery Plant." A series of papers was presented on the oxygen-flux cutting of nonmetallic materials.

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USSR

VASIL'YEV, K. V., Svarochnoye Proizvodstvo, No 7, Jul 70, p 59

Specific measures were planned for increasing the level of mechanization of the cutting process and for developing good safety norms.

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Instrumentation and Equipment

USSR

UDC 621.791.948+621.375.8.037:
681.326.3:62-41

TYCHINSKIY, V. P., Doctor of Technical Sciences, VASIL'YEV, K. V., Candidate of Technical Sciences, TROFIMOV, A. A., SABENKO, V. P., SUKHININ, G. K., YELISEYENKOV, V. I., Engineers, Research Institute for Gas Welding and Cutting Machinery

"Program-controlled Machine for Gas-laser Cutting of Sheet Materials"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 72, pp 52-53.

Abstract: The Institute has developed a machine for cutting of alloy steels, titanium and other materials using carbon-dioxide lasers, allowing any contour to be cut in the tracking mode. Contour control of the machine is by a digital programmed device using punch tape. The machine has been tested using various materials including 1-10 mm sheets of low-carbon and alloy steels of various types. Good cutting accuracy has been achieved: parts have been cut from sheets up to 3 mm thick, with smooth, even edges, and very small zone of thermal effect near the cut. Cuts are very thin (a few tenths of a millimeter).

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• USSR

VASIL'YEV, L. A., KURAMSHIN, T. A., NAZAROVA, L. P. and
TRAVNIKOVA, L. I.

"Measurement of Pressure of Light and Aerodynamic Forces
Acting on Complex Shape Body in Free-Molecule Flow"

Leningrad, Aerodinamika Razrezhennykh Gasov, 1970, pp 113-118

Abstract: The principle of the method is to measure the intensity of reflected light from an illuminated body in all directions in space, then to calculate the pressure of light force by integrating the intensity of light.

A model of the body to be investigated made of the same material is placed on a gimbals mount, it is illuminated by a collimator mounted in a fixed position relative to the model. The model is rotated in all directions relative to a stationary photocell located at a distance exceeding 50 times the size of the model. The intensity of reflected light measured by the photocell is integrated by means of a computer.

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VASIL'YEV, L. A., et al., Aerodinamika Razrezhennykh Gasov, 1970, pp 113-118

As to the aerodynamic forces it has been shown in reference 11 that they can be determined by measuring the pressure of light, provided that the distribution of reflected light is similar to the distribution of molecules reflected from the body during its travel through the free-molecule flux.

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1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--INTERRELATION BETWEEN ANTIPHASE BOUNDARIES AND DISLOCATIONS IN
ORDERED ALLOYS -U-
AUTHOR--VASILYEV, L.I. ✓
COUNTRY OF INFO--USSR
SOURCE--FIZIKA METALLOV I METALLOVEDENIE, APR. 1970, 29, (4), 766-769
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ORDERED ALLOY, ALLOY STRUCTURE, CRYSTAL DISLOCATION, GRAIN
BOUNDARY, METAL DIFFUSION, COPPER ALLOY, GOLD ALLOY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/0358 STEP NO--UR/0126/70/029/004/0766/0769
CIRC ACCESSION NO--AP0129590
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129590

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERRELATION BETWEEN ANTIPHASE BOUNDARIES AND DISLOCATIONS IN ORDERED ALLOYS IS DISCUSSED THEORETICALLY AND ON THE BASIS OF EXPERIMENTAL DATA RELATING TO CU SUB3 AU AND SIMILAR SYSTEMS. A STRICT RELATIONSHIP IS ESTABLISHED BETWEEN THE TWO TYPES OF LATTICE IMPERFECTION. THE DISLOCATION STRUCTURE HAS A FUNDAMENTAL INFLUENCE ON THE INFORMATION OF ANTIPHASE BOUNDARIES IN THE COURSE OF ORDERING AND CERTAIN DIFFUSION MECHANISMS ARE COMMON TO BOTH. THE PRACTICAL CONSEQUENCES OF THESE RELATIONSHIPS ARE ILLUSTRATED BY REF. TO CU SUB3 AU.

UNCLASSIFIED

TECHNICAL TRANSLATION

FSTC-HT-23-926-72

ENGLISH TITLE: The Projection of Photographs by Linear Congruence

FOREIGN TITLE: Proyektirovaniye Snimkov Luchami Lineynoy Kongruentsii

AUTHOR: L. N. Vasil'yev

SOURCE: Geodeziya i Kartografiya, No. 6, 1971, pp 57 - 63

Translated for FSTC by Eric Penbody, Leo Kerner Associates

NOTICE

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173 025
TITLE--MOSSBAUER EFFECT IN AN ARSENIC, SELENIUM, TIN SEMICONDUCTOR SYSTEM
-U-
AUTHOR--(G4)-BKRISOVA, Z.U., VASILYEV, L.N., SEREGIN, P.P., SHIPATOV, V.T.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 533-6
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ARSENIC, SELENIUM, TIN, GLASS COMPOSITION, VACUUM MELTING,
SEMICONDUCTOR CRYSTAL, MOSSBAUER SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1794
CIRC ACCESSION NO--AP0118763
STEP NO--UR/0449/70/004/003/0533/0536
UNCLASSIFIED

273 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0118763
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VACUUM MELTING WAS USED TO
 SYNTHESIZE A NO. OF AS, SE, SN GLASSES, HAVING THE COMPN. AS SUB1.0 SE
 SUBX SN SUBY, WHERE X EQUALS 0.8-9.0 AND GAMMA EQUALS 0.015-2.30. THE
 PRIME119 SN NUCLEUS WAS THE ONE UTILIZED TO DET. ISOMER SHIFT AND
 QUADRUPOLE SPLITTING BY MOESSBAUER SPECTROSCOPY. TO ACT AS STDS., ALL
 OF THE KNOWN BINARY COMPS. BETWEEN SN PLUS AS AND SE WERE SYNTHESIZED
 SN SUB6 AS, SN SUB3 AS SUB2, SN SUB4 AS SUB3, SNAS, SN SUB3 AS SUB4, SN
 SUB2 AS SUB3, SNSE, SNSE SUB2, AND SN SUB2 SE SUB3). THE LAST COMPD.
 MAY NOT EXIST AS A SEP. HOIETY, SINCE ITS SPECTRUM IS PRECISELY THE SAME
 AS THE SUPERIMPOSED SPECTRA OF SNSE AND SNSE SUB2. THE TERNARY ALLOYS
 OF AS, SE, AND SN ARE NOT SPECIFIC COMPS. WITH UNIQUE STRUCTURES. IN
 THE VITREOUS AREAS OF THE ALLOY, ONLY SN(IV) WAS FOUND. IN SUCH
 REGIONS, EVEN WHEN ALL OF THE SN WAS THE 119 ISOMER, NO CHARACTERISTIC
 SN(II) LINES WERE FOUND IN THE SPECTRUM. FOR THE SERIES OF ALLOYS
 CHARACTERIZED BY ASSE SUB0.8 SN SUBY, ASSE SUB1.0 SN SUBY, AND ASSE
 SUB1.5 SN SUBY, BOTH SN(II) AND SN(IV) LINES WERE FOUND IN THE SPECTRUM
 TAKEN AT THE CRYST. REGIONS. AS THE SN CONTENT OF THESE REGIONS WAS
 INCREASED, THE SN(IV) LINES TEND TO DISAPPEAR AND AS THE PERCENT SN IS
 FURTHER INCREASED, IN ADDN. TO THE SPECTRUM CORRESPONDING TO CRYST.
 SNSE, FURTHER LINE CORRESPONDING TO A SN-AS COMPD. BEGIN TO APPEAR. IN
 CRYST. GLASS ALLOYS OF THE ENRICHED SE TYPE, SUCH AS ASSE SUB2.5 SN
 SUBY, ASSE SUB4.0 SN SUBY, AND ASSE SUB9.0 SN SUBY, ONLY SN(IV) LINES
 ARE FOUND IN THE MOESSBAUER SPECTRUM WITH THE ISOMER SHIFT CORRESPONDING
 TO CRYST. SNSE SUB2.

UNCLASSIFIED

3/3 025
 CIRC ACCESSION NO--AP0118763. UNCLASSIFIED
 ABSTRACT/EXTRACT--HUT, IN A POLYCRYST. ALLOY, SUCH AS ASSE SUB2.5 SN
 SUB1.5, SN(II) LINES ARE FOUND WITH AN ISOMER SHIFT CHARACTERISTIC FOR
 CRYST. SNSE. SPECIFIC GLASS COMPS. WERE ANNEALED TO PROMOTE A GREATER
 DEGREE OF CRYSTALLINITY. ASSE SUB2.5 SN SUB0.4 GLASS AFTER BEING
 ANNEALED FOR 1500 HR AT 200DEGREES GAVE RISE TO THE CHARACTERISTIC SNSE
 SUB2 SPECTRUM, WHILE ASSE SUB1.5 SN SUB0.1, SUBJECTED TO AN ANNEAL AT
 250DEGREES FOR 750 HR GAVE RISE TO THE SNSE SPECTRUM. X RAY
 INVESTIGATION OF THESE SAMPLES CONFIRMED THE RESULTS OF THE MOESSBAUER
 STUDY. IN CHALCOGENIDE GLASSES OF THIS SYSTEM, SN IS TETRAVALENT BONDED
 ONLY TO SE AND THE STRUCTURE IS ROUGHLY TETRAGONAL WITH A COORDINATION
 NO. OF 6. ALTHOUGH THERE WAS NO UNIQUE STRUCTURE IN THESE TERNARY
 COMPS. A UNIT STRUCTURE, SE SUB3 SN, SE, ASSE SUB2, DOES EXIST IN THE
 VITREOUS PHASE TO SOME DEGREE.

PROCESSING DATE--20NOV70

UNCLASSIFIED

Organometallic Compounds

USSR

UDC: 542.91+547.244+547.84

MIKHAYLOV, B. M., VASIL'YEV, L. S., and DMITRIKOV, V. P., Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR

"2-Alkyl-Oxaborinanes"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No. 1, Jan 70, pp 198-199

Abstract: New type heterocyclic B compounds, 2-alkyl-oxaborinanes (I) were prepared by hydrolyzing $\text{Br}(\text{CH}_2)_4\text{B}(\text{OMe})\text{R}$ (II) with aqueous KOH or NaHCO_3 . Hydrolyzing II with KOH in MeOH gave derivatives of delta-(methoxy)butylboric acid. I reacted with MeONa in MeOH to give $\text{MeO}(\text{CH}_2)_4\text{B}(\text{OMe})\text{Bu}$ (III). Ia reacted vigorously with PCl_5 to yield 96% of $\text{Cl}(\text{CH}_2)_4\text{B}(\text{Cl})\text{Bu}$ (IV). The elemental analysis data, bp, d^{20}_D , and n^{20}_D data were given for IIa, IIb, III, and IV.

I/1

Acc. Nr:

AP0100226

Abstracting Service:
CHEMICAL ABST.

Ref. Code:

4R0062

111545n 2-Alkyl-1,2-oxaborinanes. Mikhailov, B. M.;
Vasil'ev, L. S.; Dimitrikov, V. P. (Inst. Org. Khim. im. Zelin-
skogo, Moscow, USSR). *Izv. Akad. Nauk SSSR, Ser. Khim.*
1970, (1), 198-9 (Russ). Hydrolysis of $\text{RB(OMe)(CH}_2\text{)}_2\text{Br}$ with
aq. KOH or NaHCO_3 gave 2-alkyl-1,2-oxaborinanes with R =
Bu (I), b_p 50.5-51°, d^{20}_D 0.8523, n^{20}_D 1.4338, and R = C_6H_{13} , b_p
61.5-63.5°, 0.8488, 1.4390. However, reaction with KOH in
MeOH led to replacement of Br and formation of $\text{MeC(CH}_2\text{)}_2\text{B-}$
 BuOMe , b_p 89°, 0.8473, 1.4244. Reaction of I with PCl_5 gave
 $\text{Cl(CH}_2\text{)}_2\text{BBuCl}$, b_p 64-65.5°, 0.9876, 1.4501, and POCl_3 ,
G. M. Kosolapoff.

REEL/FRAME
19841616

USSR

UDC: 621.372.823:621.315.61:517.564.3:
:621.385.63

✓
AVERBUKH, M. E., VASIL'YEV, L. V.

"On the Theory of a Tubular Dielectric Delay Structure of Elliptical Cross Section"

V sb. Vopr. elektron. tekhniki (Problems of Electronic Technology--collection of works), Saratov, 1970, pp 80-84 (from RZh-Radiotekhnika, No 6, Jun 70, Abstract No 6B118)

Translation: A dispersion equation is derived and critical conditions are studied for hybrid even and odd slow waves of arbitrary order using Mathieu functions. One illustration, bibliography of six titles. Resumé.

Acc. Nr.: AN0040343 ✓

Ref. Code: WR9016

AUTHOR-- VASIL, YEV, M., PROFESSOR

TITLE-- TENTH ANNIVERSARY OF THE SPACE AGE

NEWSPAPER-- SOVETSKAYA ROSSIYA, APRIL 12, 1970, P 2, COLS 5-8,
AND P 3, COLS 1-8

ABSTRACT-- IN THE OPINION OF THE AUTHOR, THE NEXT STEP IN SPACE
EXPLORATIONS WILL BE THE DEVELOPMENT OF THE LONG-TERM ORBITAL
STATION. THE AUTHOR SUPPORTS HIS THESIS BY QUOTING S. KOROLEV AND
K. TSIOLKOVSKIY.

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Reel/Frame
19741778

12

Instrumentation and Equipment

USSR

UDC 621.384.8

VASIL'YEV, M. A., ZHUK, O. V., IVASHCHENKO, YU. N., and CHEREPIN, V. T.,
Institute of Metal Physics, Academy of Sciences Ukr SSR

"High-Speed Automatic Switching of Potentiometer Bands"

Kiev, Metallofizika, No 39, 1972, pp 118-122

Abstract: A small-scale electronic device has been developed making it possible to fully automate the switching of bands on self-recording potentiometers according to a previously given program. The use of contact-free elements provides a fast switching rate which is determined by the type of output commutating element. 4 figures, 1 table, 3 bibliographic references.

1/1

USSR

UDC 537.534.8

VASIL'YEV, M. A., IVASHCHENKO, Yu. N., and CHEREPIN, V. T.

"The Effect of Composition and Structure of Iron-Carbon Alloys on the Yield of Positive Ions During Sputtering by Ion Bombardment"

Kiev, Metallofizika, No 32, 1970, pp 143-148

Translation: Iron alloys containing from 0.025 to 1.5 wt.% carbon were sputtered by the primary beam of positive argon ions with an energy of 6 kev. The density of the bombarding current was approximately 0.6 ma/cm². The amount of ion current in the range of mass numbers 1-200 was measured by the mass spectrometric method. The existence of a linear dependence of the intensity of ion peaks for $^{12}\text{C}^+$, $^{56}\text{Fe}^+$, and $^{180}\text{Fe}_3\text{C}^+$ on the carbon content in iron was established. Investigation on deformed specimens from Armco iron and on an alloy with 0.73% carbon tempered after hardening showed that the intensity of peaks $^{56}\text{Fe}^+$ and $^{12}\text{C}^+$ was not sensitive to structural changes in the matrix.

Bibliography: 10 entries. Illustrations: 4. Tables: 2.

1/1

UDC 537.534.8

USSR

VASIL'YEV, M. A., IVASHCHENKO, Yu. N., and CHEREPIN, V. T.

"Mass Spectrometric Investigation of Ion Emission Arising During Bombardment of Metals With Argon Ions"

Kiev, Metallofizika, No 32, 1970, pp 148-153

Translation: The application of the industrial MI-1305 mass spectrometer for the study of secondary ion emission arising during the bombardment of metals with a beam of positive argon ions is described. A universal attachment, which makes it possible to use this mass spectrometer both for the study of secondary positive ions and for an ordinary isotopic analysis with standard ion sources, is proposed.

As a result of control tests on titanium specimens the instrument's resolving power equal to 100 was attained. The intensities of secondary ion currents for 13 metals are presented. The mass spectrum of the secondary ion emission arising during the bombardment of a target from vanadium with the primary ion beam is described in detail.

Bibliography: 7 entries. Illustrations: 4. Tables: 2.

1/1

- 78 -

USSR

UDC 621.371:551.510.535

VASIL'YEV, M. B. and SAVICH, N. A.

"Second-Order Corrections in Radio Wave Propagation Through the Ionosphere"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 3 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses: Section 3--collection of works) "Nauka," 1972 pp 77-83 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A368)

Translation: On the assumption of a spherically symmetrical ionosphere, relationships are obtained for refraction corrections, the phase path, and the spatial deviation of the radio beam trajectory from a straight line with an accuracy up to terms of the second order of smallness and with no limitations on the height of the source above the earth's surface; a numerical estimate is made of corrections of this order without taking into account the effect of the earth's magnetic field and the collision rate. Resume

1/1

- 49 -

USSR

UDC 669.243 + 669.33:669.052

MASH'YANOV, N. P., KOLESNIKOV, B. I., LAPIN, Yu. D., MECHEV, V. V., RYABOV, V. G.,
VASIL'YEV, M. G., and SHUSTITSKIY, V. D.

"Certain Problems of the Production of Copper and Nickel From Complex Crude
Sulfides"

Moscow, Tsvetnyye Metally, No 10, Oct 70, pp 11-14

Abstract: Difficulties encountered in the production of copper and nickel from sulfide copper-nickel ores are discussed. Procedures used in the USSR for separating these metals as well as cobalt are evaluated, and the necessity for the reconstruction of present copper-nickel production combines is stressed. A plan is recommended which would involve the parallel production of copper and nickel with an exchange of semi-products between them. A schematic production chart and a table containing the compositions of basic materials used in processing sulfide copper-nickel ores are presented. The recommended plan would ensure the recovery of 98-99% Cu, 96-97% Ni, and 85-87% Co, and would increase the recovery of noble metals and platinum. The plan involves a substantial increase in the use of oxygen, not only for melting but also for converting ores and concentrates. The plan would also make it possible to utilize more complete-

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USSR

MASH'YANOV, N. P., et al, Tsvetnyye Metally, No 10, Oct 70, pp 11-14
ly the crude sulfides, and to obtain pig-iron and construction materials from
the high-ferrous converter mattes.

2/2

VASIL'YEV M. M.

RAD/18-160/5-111-13
Duc'ya 30

Vasil'yev, M. M. Supersonic flow around a cone at an angle of attack. Trudy II Respublikanskoy konferentsii po aerodinamicheskoy, teplotnoy i massoobmennu. Sektziya "Aerodinamika bol'shikh skorostey". Kiyev, Kiyevskiy universitet, 1971, 75-78. (RZhMekh, 5/72, no. 5B338)

The method reported earlier by the author (MZhG, no. 1, 1970, 33-39, RZhMekh, 1970.6B240) is used to solve the problem of supersonic flow around a cone at an angle of attack with an accuracy of values of the second order of smallness, inclusively. The results are compared with a solution of the problem by a method of nets of Babenko, et al. (Babenko, Voskresenskiy, Lyubimov, and Rusanov. (Prostranstvo i vremya obtekanie gladikih tel ideal'nym razom. Three-dimensional flow around smooth bodies by an ideal gas). Moskva, Nauka, 1964, RZhMekh, 1965, 4B207K), and with the solution obtained by the method of expansion into a double series by Sapunov (IN: Transvukovyye tekhnika gaza. Transonic gas flow. Saratov. Saratovskiy universitet, 1964, 164-177, RZhMekh, 1965, 9B231).

Kosorukov, A. L. Supersonic flow around smooth bodies with relaxation. IN: Trudy II Respublikanskoy konferentsii po aerodinamicheskoy, teplotnoy i massoobmennu. Sektziya "Aerodinamika bol'shikh skorostey". Kiyev, Kiyevskiy universitet, 1971, 70-74. (RZhMekh, 5/72, no. 5B337)

Steady flow around an axisymmetric blunt body by a nonviscous, nonthermally conductive gas is solved by the method of adjustments, with account taken of oscillatory relaxation. To reduce the difficulties of solving relaxation equations, the author divides the initial system into two subsystems: 1) equations for the velocity and pressure components, and

USSR

UDC 533.92:621.039.61

VASIL'YEV, M. P., KUZNETSOV, Yu. K., PAVLICHENKO, O. S., STARIKOV, V. N.

"Effect of the Degree of Homogeneity of a Magnetic Field on the Radiation From a Plasma of Harmonics of Electron Cyclotron Frequency"

Fiz. plazmy i probl. uprav. termoyader. sinteza. Resp. merhved. sb.
(Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No 3, pp 63-66 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G283)

Translation: The results of a study of the spectrum and intensity of the radiation, in the harmonics of an electron cyclotron frequency, from a negative discharge plasma column are presented. It was observed that intense radiation of the cyclotron harmonics, the spectrum of which consists of several narrow lines, arises upon achieving a very high degree of magnetic field homogeneity.

1/1

- 54 -

1/2 045 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SUPERSONIC GAS FLOW PAST A CONE AT AN ANGLE OF ATTACK -U-
AUTHOR--VASILYEV, M.M. ✓
COUNTRY OF INFO--USSR
SOURCE--AKADEMIYA NAUK SSSR, IZVESTIYA, MEKHANIKA ZHIDKOSTI I GAZA,
JAN.-FEB. 1970, P. 33-39
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SUPERSONIC FLOW, GAS FLOW, CONE SHELL, FLOW VELOCITY, ENTROPY,
VORTEX, NUMERIC SOLUTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1788 STEP NO--UR/0421/70/000/000/0033/0039
CIRC ACCESSION NO--AP0112774
UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112774

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. ANALYSIS OF THE SUPERSONIC INVISCID GAS FLOW PAS AN INFINITE CIRCULAR CONE AT INCIDENCE, ON THE BASIS OF STONE'S (1948) FORMULAS AND WILLETT'S (1960) CORRECTIONS FOR THE VELOCITY COMPONENTS AT THE CONE SURFACE. A SOLUTION IS OBTAINED WHICH DIFFERS FROM STONE'S SOLUTION IN THAT TERMS OF HIGHER ORDER SMALLNESS ARE RETAINED IN THE ENTROPY CONSERVATION EQUATION. THIS MADE IT POSSIBLE TO DETERMINE MORE CORRECTLY THE BEHAVIOR OF THE ENTROPY AND OF CERTAIN ASSOCIATED FUNCTIONS IN THE ENTIRE FLOW, INCLUDING THE VORTEX LAYER. THE NUMERICAL RESULTS OBTAINED ARE ANALYZED AND ARE COMPARED WITH STONE'S SOLUTION AND A SOLUTION OBTAINED BY THE METHOD OF NETWORKS.

UNCLASSIFIED

1/2 043
TITLE--ION ION EMISSION OF PURE METALS -U- UNCLASSIFIED PROCESSING DATE--30OCT70
AUTHOR--(03)-VASILYEV, M.V., IVASHCHENKO, YU.N., CHEREPIN, V.T.
COUNTRY OF INFO--USSR
SOURCE--DOPOV. AKAD. NAUK. UKR. USU, SER. A 1970, 32(2), 141-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--ION EMISSION, METAL OXIDE, ENTHALPY, ALUMINUM, VANADIUM,
TITANIUM, CHROMIUM, BERYLLIUM, ZINC, GERMANIUM, TUNGSTEN, IRON, SILICON,
NICKEL, COBALT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/2068 STEP NO--UR/0441/70/032/002/0141/0143
CIRC ACCESSION NO--AT0122297
UNCLASSIFIED

2/2 043

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0122297

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MASS SPECTROMETRIC STUDIES WERE CARRIED OUT OF SECONDARY ION EMISSION DUE TO ION BOMBARDMENT OF AL, TI, MO, V, CR, BE, ZN, GE, NB, W, FE, SI, NI, CO, TA, CU, PD, SB, AND SN AS PURE METALS. RELATIVE INTENSITIES WERE RECORDED OF THE SECONDARY ION CURRENTS, AND IT WAS FOUND THAT ELEMENTS SHOWING HIGHER AFFINITY TO O GAVE HIGHER YIELDS OF SECONDARY IONS. CORRELATION WAS ESTABLISHED BETWEEN DELTAH SUB298 PRIMEDEGREESK VALUES OF THE OXIDES OF THE ELEMENTS AND THEIR SECONDARY EMISSION INTENSITIES. SURFACE CHEM. COMPS. PLAYED AN IMPORTANT ROLE IN THE PROCESS OF SECONDARY ION EMISSION.

FACILITY: INST. METALLOFIZ., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 621.316.722.1

GALTEYEV, F. F., VASIL'YEV, M. Yu., VEDENEYEV, G. M.

"D-C Voltage Stabilizer With Increased Efficiency"

V sb. Ustroystva preobrazovat. tekhn. (Converter Technology Devices -- Collection of Works), Vyp. 1, Kiev, 1969, pp 222-229 (from RZh--Elektronika i yeye primeneniye No 3, Mar 70, Abstract No 3B638)

Translation: Transistor-magnetic d-c voltage stabilizers are considered in which the booster regulator obtains power from two multivibrators, one of which has an assigned frequency, and the second is supplied from the output voltage, and its frequency is determined by the output voltage. In the process of operation, synchronization of the frequencies of the generators results. To sum up, a fixed displacement is established for the phases of both generator which determines the magnitude of the booster voltage. In the regulator, the astatic principle of regulation is used, which assures high precision. The pulse method of regulation in combination with the principle of regulation of part of the power transmitted causes the high efficiency of the circuit. 5 ill. 2 ref. S.D.

1/1

Information Theory

USSR

UDC 681.327.12

SMOLYANSKIY, B. Ye., VASIL'YEV, N. G., and ROMANOV, A. M.

"Graph Reader"

USSR Authors' Certificate No 298939, Cl. G 06 k 11/00, filed 21 Jan 69, published 26 Apr 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 72, Abstract No 1A456P)

Translation: A graph reader is proposed. To increase accuracy in reading the graphic recording of several processes, the reading-spot deflection oscillators through amplitude comparators are coupled with the outputs of the phase demodulators of the two adjacent channels, while the search sweep oscillators of all channels are series-connected, one of them being coupled with the unit for indicating the simultaneous presence of second harmonics of the reading channels. One illustration.

1/1

USSR

UDC: 621.374.5(088.8)

Vasil'yev, N. I., YEFREMOV, P. A., PLATONOV, O. T.

"A Delay Line"

USSR Author's Certificate No 267682, filed 2 Feb 68, published 5 Aug 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G318 P)

Translation: This Author's Certificate introduces a delay line made up of L-shaped links containing an inductance and capacitance connected in series with taps from each link. To provide continuous control of delay without introducing nonhomogeneities into the line, bronze discs are soldered to the leads, acting as one plate of a multisection capacitor which is completed by a movable grounded plate.

1/1

1/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--BASICITY AND REACTIVITY OF ACETALS -U-
AUTHOR--(05)-VASILYEV, N.I., VOLKOV, V.P., IRZHAK, V.I., TELEGIN, G.F.,
YENIKOLOPYAN, N.S.
COUNTRY OF INFO--USSR
SOURCE--KINET. KATAL.1970, 11(3), 579-83
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ACETAL, SOLUTION ALKALINITY, ALKOXIDE, SILANE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605012/D02 STEP NO--UR/0195/70/011/003/0579/0583
CIRC ACCESSION NO--AP0140285
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140285

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BASICITY OF 10 ACETALS WAS
DETD. BY IR SPECTROSCOPY BY THE SHIFT OF UPSILON SUBOH DUE TO ASSOCH.
WITH PHOH. ALL INVESTIGATED ACETALS ARE VERY WEAK BASES (KAPPA
SUBASSOCH. LESS THAN 4.1) AND THEIR BASICITY DOES NOT AFFECT THEIR
REACTIONS WITH ALKOXY SILANES. FACILITY: INST. KHIM. FIZ.,
CHERNOGOLOVKA, USSR.

UNCLASSIFIED

USSR

UDC: 621.317.089.68:621.396.62

VASIL'YEV, N. M., TRET'YAKOV, L. N., TUGARINOV, I. M., MOROZ, A. M.

"Equipment for Receiving the Carrier Frequencies of Centimeter Wavelength Radio Stations"

Dokl. Nauchno-tekhn. seminar "Metrologiya v radioelektronike". Tezisy. Ch. 2 (Reports of the Scientific and Technical Conference on Metrology in Radio Electronics. Summaries. Part 2), Moscow, 1970, pp 92-101 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A206)

Translation: The paper describes equipment developed at the All-Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements for receiving the carrier frequencies of centimeter wavelength radio stations and comparing them with the frequency of a secondary standard. Block diagrams are given for the systems of reception and comparison, the circuits of the mixer and multipliers, and also the results of an investigation of the phase stability of the receivers and synthesizers. The results are analyzed. E. L.

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USSR

UDC 535.343.32:539.21

PERSHITS, YA. N., VASIL'YEV, N. N., Pskov State Pedagogical
Institute imeni S. M. Kirov

"Optical Absorption in Crystals and Solutions of Potassium Halides
Doped With Lead"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 12, 1971,
pp 71-76

Abstract: The absorption of aqueous-haloid solutions of $PbCl_2$, $PbBr_2$, PbI_2 , and doped crystals was studied in the region of the long-wave absorption band in order to explain the relationship between absorption in mixed solutions and crystals. A spectral photometry technique was developed to determine the lead concentration, and the relationship between the optical absorption of alkali-halide crystals doped with $PbCl_2$ and the corresponding aqueous solutions was studied. The absorption spectra were measured on the SF-4A spectrophotometer. It is shown that differences in the position of the absorption maxima of $(MHal_n)^{m-1}$ complexes are caused by the effect of water molecules and not by the structure of the complexes. It was further established that the

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USSR

PERSHITS, YA. N. et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 12, 1971, pp 71-76

long-wave absorption band in a crystal (273 nm in the case of $KCl + PbCl_2$) is caused by the interaction of lead ions with anions independent of the nature of the distribution of the impurity in the crystal. The data show that this absorption band is caused not only by ions localized in the regular intersections of the crystal lattice responsible for impurity conductivity but also by all lead ions interacting with the anions. It is concluded that the structure of the negative complexes does not itself have a considerable effect on the position of the maxima of the absorption band. The differences in the type of localization of bivalent lead ions in the crystal are said to have a considerable effect on conductivity but may not appear in the position of the maxima of the absorption band.

2/2

USSR

UDC 576.809.56

AMBROSOV, V. A., VASIL'YEV, N. N., and SKLADNEV, A. A., Moscow Technological Institute of the Food Industry

"Mathematical Model of the Reproduction of Microorganisms Under Conditions of Periodic Cultivation"

Moscow, Prikladnaya Biokhimiya i Mikrobiologiya, Vol 6, No 4, Jul/Aug 70, pp 363-374

Abstract: On the basis of an analysis of the role of thermodynamic factors in the kinetics of reproduction of prototypes, N. I. Kobozev proposed a model of a reversible autocatalytic process in 1962. In the present study, several aspects of this model are analyzed and defined concretely as applied to the growth of microbial populations. The mechanism of microbial reproduction in a dynamic cell-medium system under conditions of periodic cultivation is reflected in the model by the function $(n-1)M + X \xrightleftharpoons[k_2]{k_1} nX$,

where n is the number of "cellular units" in substrate M and cells X ; k_1 is the constant of the rate of formation of the biomass, characterizing the specific rate of synthesis in the cells; and k_2 is the constant of the rate of dying off characterizing the rate of disintegration of the cells. In other words, microbial cell

USSR

AMBROSOV, V. A., et al, Prikladnaya Biokhimiya i Mikrobiologiya, Vol 6, No 4, Jul/Aug 70, pp 363-374

X requires $(n - 1)$ "units" of substrate M to form n new cells. Methods of determining the parameters of the model are discussed, and the results of experiments with *Candida intermedia*, *Brevibacterium* sp. 22, and *Saccharomyces cerevisiae* to test the adequacy of the model are summarized.

2/2

- 10 -

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--2,2,BIS ALKYLTHIO,1,TRIMETHYLSILOXYPROPANES -U-
AUTHOR--(03)-VASILYEV, N.P., MIKHALEVA, A.I., ATAVIN, A.S.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 820-1
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANOSILICON COMPOUND, ORGANIC SULFUR COMPOUND, PROPANE,
ORGANIC SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1129 STEP NO--UR/0079/70/040700470820/0821
CIRC ACCESSION NO--AP0128556
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128556

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 11 G ME SUB3 SICL TO 20.8 G
MEC(SPK) SUB2 CH SUB2 OH IN ET SUB2 O AND 20 ML ET SUB3 N GAVE AFTER 2
HR 75PERCENT MEC(SPK) SUB2 CH SUB2 OSIME SUB3, 8 SUB1 94-5DEGREES, D
PRIME20 0.9718, N PRIME20 SUBD 1.4950; SIMILARLY WAS PREPD. THE *SBU)
SUB2 ANALOG (I), 78PERCENT, 8 SUB1 137080DEGREES, 0.9544, 1.4872; AND
76PERCENT (SCHSUB2 CHME SUB2) SUB2 ANALOG, 8 SUB2 126-7DEGREES, 0.9413,
1.4782. HEATING I WITH 5PERCENT HCL 3 HK GAVE 85PERCENT MEC(SBU) SUB2
CH SUB2 OH, 8 SUB2 126DEGREES. FACILITY: IRKUTSK. INST. ORG.
KHIM., IRKUTSK, USSR.

UNCLASSIFIED

Acc. Nr

AP0041853

Abstracting Service:
CHEMICAL ABST.

Ref. Code

4170 4R0366

89688n Rearrangement in the thiolysis of 2-methyl-2-(hydroxymethyl)-1,3-dioxolane. Trofimov, B. A.; Atayin, A. S.; Mikhaleva, A. I.; Kalabin, G. A.; Vasil'ev, N. P. (Irkutsk Inst. Org. Khim., Irkutsk, USSR). *Zh. Org. Khim.* 1970, 6(1), 190-1 (Russ). The reaction of 2-methyl-2-(hydroxymethyl)-1,3-dioxolane with RSH (R = Pr or iso-Bu) in acid medium gave 5-10% (RS)₂CMeCH₂OH and 80-90% (RS)₂CHCHMeSR. The expected "normal" reaction products (RS)₂CMeCH₂SR were not formed.

CPJR

REEL/FRAME

19751734

7

USSR

UDC 612.42.014.426

BOGINICH, L. F., VASIL'YEV, N. V., DARCHUK, V. A., and MELIK-GAYKAZYAN, Ye. V.,
Chair of Microbiology, Tomsk Medical Institute

"Complex Reaction of Lymphoid Tissue to the Effect of an Alternating Magnetic
Field"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14,
No 4, Jul/Aug 70, pp 73-74.

Abstract: A study was made of cytological shifts in the spleen, thymus, and lymph nodes of rats exposed to an alternating magnetic field over an extended period of time. The reaction of the lymphoid tissue occurred in two stages. The first stage, lasting less than a day, consisted of a decrease in the number of lymphoblasts and proplasmocytes and an increase in the number of medium-size lymphocytes. The second stage developed by the 3rd day and was marked by an increase in the number of proplasmocytes and medium-size lymphocytes in all of the organs studied and by an increase in the number of medium-size lymphocytes in the thymus and lymph nodes. The resemblance of the dynamics of proplasmocytes with that of cells of the plasmatic series in the early stages of immunogenesis (the inductive phase of antibody formation) suggests that nonspecific mechanisms play an important part in the development of immunomorphological shifts.

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USSR

UDC 612.42.014.426

VASIL'YEV, N. V., BOGINICH, L. F., and SHILYAYEVA, G. G., Chair of Micro-Biology and Central Scientific Research Laboratory, Tomsk Medical Institute

"Comparison of the Reaction of Lymph Tissue to Antigenic and Nonantigenic (Alternating Magnetic Field) Stimulation"

Moscow, Arkhiv Patologii, No 9, 1971, pp 47-51

Abstract: Exposure of rats to an alternating magnetic field (200 oersteds, frequency of 50 Hz) induced an immunomorphological response of the thymus, spleen, and lymph nodes comparable to that observed after antigenic stimulation - desquamative sinusitis, stimulation of the reticular syncytium, proliferation of plasma cells, and hyperplasia of the spleen and lymph nodes. Similar but milder shifts were observed in control animals kept in tight containers like the experimental rats, suggesting that they were the result of stress (enforced immobilization). The similarity of the reaction of lymph tissue to antigenic and nonantigenic factors indicates that it is a form of Selye's adaptation syndrome.

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USSR

UDC 669.046.5

SOKOLOV, G. A., SERGEYEV, A. G., TSYKIN, L. V., ZAVRAZHIN, V. D.,
VERKHOVTSSEV, E. V., VASIL'YEV, N. Ye., and D'YAKOV, S. I.

"The Effect of Vacuum-Slag and Two-Fold Slag Treatments on Electrical Steel
Quality"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIIS). (Collection of
Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys)
Izd-vo "Metallurgiya," No 61, 1970, pp 212-213

Translation of abstract: The effect of various outside-furnace steel treat-
ments on desulfurization, contamination by nonmetallic impurities, and
mechanical properties of various steels is considered. Data are given on the
improvement of mechanical properties of structural alloy steels. 1 table.

1/1

USSR

UDC 669.046.5

SITNIKOV, V. F., VERKHOVTSEV, E. V., VASIL'YEV, N. Ye., ZHDANOVICH, K. K. and UPSHINSKIY, Ye. A.

"Development of the Technology for High-Quality Alloy Steel Making in Martin Furnace With Deoxidation and Alloying in Ladle With Liquid Alloy and Simultaneous Refining With Synthetic Slag"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIS). (Collection of Works. Modern Problems of Steel Quality), (Moscow Institute of Steel and Alloys). Izd-vo "Metallurgiya," No 61, 1970, pp 250-252

Translation of Abstract: Results are presented on the joint treatment of martin steel in a ladle by liquid alloys and synthetic slags, resulting in a substantially increased assimilation of the alloying elements, in a high degree of desulfurization and dephosphorization, and in reduction of steel contamination by nonmetallic impurities. The quality of metal obtained is similar to that produced in electric furnaces. 2 tables.

1/1

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USSR

UDC 669.658.562

SOKOLOV, G. A., VERKHOVTSSEV, E. V., KUNGUROV, V. M., SERGEEV, A. G., KASIL'YEV, N. Ye., and VDOVIN, V. R., Lipetsk Branch of Moscow Institute of Steels and Alloys; Izhevsk Metallurgical Plant.

"Refining Open-Hearth Steel With Synthetic White Slag"

Moscow, Metallurg, No 9, Sep 70, pp 17-19

Abstract: In searching for ways of cutting costs of liquid synthetic slags produced from the costly SiO_2 byproduct, this paper attempts to introduce new compositions of slags designed for out-of-the-furnace refining of steel. The new composition, comprising 45-55% CaO , 17-25% SiO_2 , 5-10% MgO , 7-15% Al_2O_3 , and 2-7% CaF_2 , appears to possess the most favorable combination of physicochemical properties. Industrial treatment of 20KhN3A and 30KhGSA constructional open-hearth steels with synthetic slag of this composition reduced the sulfur content in the experimental steel by 55-70%. The final sulfur level in the treated steel was low and conformed with that of electric steel treated with lime-silica slag. The service characteristics of the experimental steel also appeared to reach the level of steels treated with standard liquid synthetic slags. White synthetic slag will make possible the production of top-quality steel at lower cost per charge. At the Izhevsk Metallurgical Plant the savings per ton of treated steel amounted to 2.2 rubles.

1/1

USSR

UDC 532.517.4

BUKREYEV, V. I.; VASIL'YEV, O. F., Corresponding Member of the
USSR Academy of Sciences; LYTKIN, Yu. M., Institute of Hydrody-
namics, Novosibirsk

"Effect of the Shape of a Body on the Self-Modeling Characteristic
of its Axially Symmetrical Trace"

Moscow, Doklady Akademii nauk SSSR, vol 207, No 4, 1972, pp 804-807

Abstract: The purpose of this paper is to examine the turbulent wake of a body of revolution surrounded by a current of an infinitely uniform incompressible fluid with a constant velocity in a direction parallel to the body's axis. If the Reynolds number is sufficiently large, it can be expected that at sufficiently large distances from the body, a self-modeling flow situation is established. A discussion of the results of detailed experimental research shows that the flow in self-modeling axially symmetrical wakes depends on the shape of the body as well as on the resistive force and the velocity of the incident flow. A description of the apparatus used for these experiments is given with the results presented in the form of curves. The authors express their gratitude to V. A. Kostomakhe and A. V. Gusev for making the measurements.

1/1

UNCLASSIFIED

PROCESSING DATE--23OCT70

1/2 032
TITLE--METABOLISM OF THE NUCLEAR RNA OF THE CEREBRAL CORTEX IN THE PROCESS
OF MOTOR ALIMENTARY CONDITIONING -U-
AUTHOR-(04)-KUZMIN, S.M., TIMKIN, V.N., MEZENTSEV, A.N., VASILYEV, O.P.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 3, PP
474-477
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL
SCIENCES
TOPIC TAGS--CONDITIONED REFLEX, BRAIN, NERVE TISSUE, RNA, LEARNING THEORY,
METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0385

STEP NO--UR/0247/70/020/003/0474/0477

CIRC ACCESSION NO--AP0121072

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121072

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. IT HAS BEEN FOUND THAT IN THE PROCESS OF ELABORATION OF A SIMPLE FOOD PROCURING CONDITIONED REFLEX IN RATS, THE METABOLISM OF THE NUCLEAR RNA OF THE CORTICAL NERVE CELLS INCREASES, PASSES THROUGH A MAXIMUM AND BY THE END OF LEARNING REVERTS TO THE INITIAL VALUE. WITHIN THE LIMITS OF EXPERIMENTAL ERROR, A LINEAR CORRELATION IS RECORDED BETWEEN THE INCREMENT OF THE ANIMAL'S BEHAVIOUR ENTROPY IN THE PROCESS OF LEARNING AND AN ENHANCED NUCLEAR RNA METABOLISM.

UNCLASSIFIED

USSR

UDC 519.21

VASIL'YEV, P. I.

"Infinite Stable Flow"

Materialy Nauchn. Konferentsii Prof.-Prepodavat. Sostava Kishinev. Un-ta po
Itogam Nauchn.-Issled. Raboty za 1970 g. Sekts. Yestestv. i Eksperim. n.
[Materials of Scientific Conference of Teaching Staff of Kishinev University
on Results of Scientific Research Work for 1970, Natural and Experimental
Sciences Section -- Collection of Works], Kishinev, 1970, p 25-26, (Translated
from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V105).

NO ABSTRACT.

CENTERS OF ATMOSPHERIC EFFECT AND HEMISPHERICAL FORECASTING OF METEOROLOGICAL ELEMENTS ON TWO LEVELS IN THE TROPOSPHERE

[Article by P. P. Vasil'yev, USSR Hydrometeorological Scientific Research Center; Moscow, Hydrologiya i Klimatologiya, Russian, No 3, 1972, submitted 29 November 1971, pp-33-43]

A study was made of the hydrodynamics theory of the occurrence and evolution of centers of atmospheric effect. It is assumed that the centers of atmospheric effect occur as a result of migration of baric centers (near any one position under the effect of temperature contrasts of the continents and oceans. This theory is used for the construction of a forecasting scheme along with general forecasting of the meteorological elements of nonlinear global atmospheric oscillations accompanying the centers of effect of the atmosphere. Examples are presented of forecasting the AT 700 and AT 300 fields for the Northern Hemisphere of the Earth with respect to the 2-level model of the atmosphere.

In reference [9], a study was made of the problem of the occurrence of centers of effect of the atmosphere as a result of horizontal baroclinicity for the single-level model of the atmosphere. Here, it was assumed that the centers of effect of the atmosphere occur as a result of migration of baric centers. The migration of baric centers is considered as the exhibition of nonlinear global variations of the atmosphere occurring under conditions of temperature contrasts of the continents and oceans.

The problem reduced to determining the expansion coefficients with respect to the spherical functions of the current function field from the system of ordinary nonlinear differential equations depending on time. Numerical experiments were performed for finding the effect of the initial values of the circulation indexes and also the horizontal turbulent mixing on the formation of the centers of effect of the atmosphere. As a result of solving the hydrodynamic problem, phase trajectories were obtained which surround several points; these points corresponded to the centers of effect of the atmosphere. The periods of displacement and the mean position of the baric centers were determined.

APR 55899
6 May 72

USSR

UDC 621.377.622.322.5.002.2(088.8)(47)

SAVEL'YEV, B. I., MARINGULOV, K. A., and VASIL'YEV, P. P.

"A Method of Manufacturing Phototemplates for Multilayer Printed Thin-Film Circuit Boards"

USSR Author's Certificate No 280594, Filed 7 Oct 68, Published 17 Nov 70
(from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B104 p)

Translation: A method of manufacturing phototemplates for multilayer printed thin-film circuit boards is suggested. It is based on making the masters from a set of flat mock-ups of parts and contact areas, which are interconnected by tracing elements covered with a sticky compound that simulates printed conductors. In order to simplify the process of manufacturing phototemplates, the masters are made by direct and mirror arrangement of the press. Two circular conductors of different colors are arranged in parallel and used as tracing elements; one of them has a diameter equal to the width of a printed conductor, while the other has a diameter equal to the minimum clearance between neighboring printed conductors. Alignment of contact areas in the masters of the current-carrying layers (starting with the second layer) is effected by a pinhole through the center of the contact

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USSR

SAVEL'YEV, B. I., et al., USSR Author's Certificate No 280594, Filed 7 Oct 68, Published 17 Nov 70 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B104 P)

area of the first current-carrying layer. In the masters of the insulating layers there is an opening whose diameter is equal to the diameter of the openings in the printed circuit board.

2/2

- 28 -

USSR

UDC: 621.3.049.75

SAVEL'YEV, B. I., MARINGULOV, K. A., VASIL'YEV, P. P.

"A Method of Making Photo Templates for Multilayer Thin-Film Printed Circuit Boards"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratztsy, Tovarnyye Znaki, No 28, 1970, Soviet Patent No 280594, Class 21, filed 7 Oct 68, p 52

Abstract: This Author's Certificate introduces a method of making photo templates for multilayer thin-film printed circuit boards. The procedure is based on the preparation of photo originals from a set of flat models of components and contact areas interconnected by layout elements which simulate printed-circuit conductors and are coated with a sticky substance. As a distinguishing feature of the patent, the process of making the photo templates is simplified by making the photo originals with direct and mirror reflection arrangement of the printed material, and using two parallel circular conductors as the layout elements. These conductors are of different colors, one of them being the same diameter as the printed-circuit conductor, while the diameter of the other is equal to the minimum clearance between adjacent printed-circuit conductors. The contact areas are centered on the photo originals of current-conducting layers (beginning with the second layer) by passing a needle through the center of the contact area of the first current-conducting layer, while holes are punched through the photo originals of insulating layers with a diameter equal to that of the holes in the printed-circuit board.

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- 10 -

USSR

UDC 612.751+612.311/.015.3-06:/612.223.11+612.273.2

VOLOZHIN, A. I., VASIL'YEV, P. V., and MALKIN, V. B., Chair of Pathological Physiology, Moscow Medical Institute of Stomatology, Moscow

"The Effects of a Gaseous Medium With a Deficiency of Oxygen and an Excess of Carbon Dioxide on Calcium and Protein Metabolism in the Bones and Teeth"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, May-Jun 73, pp 20-24

Abstract: Rats were kept for 20 or 30 days under conditions of fractional (6 hrs per day), gradually increasing hypoxia (405 mm Hg on stepwise reduction from 525 mm Hg within 5 days), while the CO₂ concentration in the air which they inhaled was gradually increased from 3 to 5%. This led to a reduction of the rate of loss of ⁴⁵Ca from bone tissue and an increase of incorporation of ⁴⁵Ca into this tissue. The rate of incorporation of ²¹⁴C-glycine into the total proteins of the bones and teeth was increased. The increase in synthetic processes in the bone tissue was presumably associated with a reduction of the regional circulation affecting this tissue, which is insensitive to hypoxia, while the circulation supplying O₂ to hypoxia-sensitive tissues was increased. Artificial gas media deficient in O₂, but containing an excess of CO₂, can presumably be used to prevent demineralization of bones of the skeleton as a

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USSR

VOLOZHIN, A. I., et al., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, May/Jun 73, pp 20-24

result of the enforced reduction of motor activity and weightlessness under conditions of prolonged space travel.

2/2

- 36 -

USSR

UDC: 681.355:519.24

VASIL'YEV, P. V., SOLODYANNIKOV, Yu. V., SHIROKOV, S. M., Kuybyshev Electrical Engineering Institute of Communications

"A Computer Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331407, filed 22 Jun 70, published 7 Mar 72, p 158

Translation: This Author's Certificate introduces a computer device which contains an adder module, matching devices, memory units, switches, an input device, a registration device, and a control module. As a distinguishing feature of the device the functional possibilities of the unit are extended by connecting one input of each switch through the corresponding matching device to one of the outputs of the adder module and the input of the registration device. The other input and one of the outputs of each switch are connected to the corresponding memory unit, and the other output of each switch is connected to the corresponding output of the input device and through another corresponding matching device to one of the inputs of the adder module. This input of the adder module is also connected to the input device.

1/1

- 53 -

VASIL'YEV, P. V.

S0:JPRS 54435
9 NOV 71

UDC: 612.766.2.014.464

THE EFFECT OF AN ALTERED GAS ENVIRONMENT ON SOME PHYSIOLOGICAL EFFECTS OF
PROLONGED HYPOKINESIA (EXPERIMENTS ON ANIMALS)

(Article by P.V. Vasil'yev, A.A. Alikin, V.B. Malkin, A.I. Voloshin, Ye.V. Logunov, V.Ye. Potkin, N.A. Roshchinskii, S.N. Uglolov, Moscow, Vsesoyuznyi Nauchnyi Tsentr Meditsinskikh Nauk SSSR, Russian, No 9, 1971, pp 78-83)

In the course of investigating the effect on the organism of prolonged hypokinesia the conception of a hypodynamic syndrome was formed which is characterized by specific functional disturbances which diminish the organism's adaptive capabilities (A.R. Kotovskaya et al., 1964; L.I. Kukurin et al., 1966; L.I. Kukurin, 1968; Miller and Leverett, and others).

Various measures have been proposed to prevent development of the hypodynamic syndrome: physical exercise (A.V. Yermolin et al., 1969; V.I. Stepantsov and A.V. Yermolin; Branton et al., Miller et al., and others), use of arm and leg cuffs (I.B. Pestov, Vogt; Stevens et al., and others), use of pharmacological preparations (P.V. Vasil'yev and B.Yu. Lapinskaya; Bohn et al.; McCall et al.) and, finally, use of an "active" gas environment. The purposefulness of special means as a means of preventing development of deconditioning phenomena was theoretically substantiated in the works of Soviet and foreign researchers (V.B. Malkin et al.; P.V. Vasil'yev and S.N. Uglolov, and others).

These studies are indicative of the effectiveness of using "hypoxic" gas environments, and our authors called serious attention to a regimen of "hypoxic" training. Their studies established that optimum effectiveness is observed with step-by-step elevation to increasing altitudes, staying there for 6-8 hours and descending for 28-16 hours every day [sic]. Such a regimen of training for hypoxia is most effective for development of compensatory reorganization on the molecular and cellular levels (F.Z. Meyerson et al.).

The purpose of the present work was to investigate the possibility of using various gas environment receptors as a means of preventing development of the hypodynamic syndrome.

Method. The investigations were conducted in four series of experiments on 100 mongrel albino mice, weighing 120 to 200 grams. The distribution of animals in groups and experimental conditions are shown in Table 1.

1/2 024
UNCLASSIFIED
PROCESSING DATE--23OCT70
TITLE--EFFECT OF SOME PHARMACOLOGICAL SUBSTANCES ON THE STABILITY OF
ANIMALS UNDER CERTAIN EXTREMAL LOADS -U-
AUTHOR--(03)-GLOD, G.D., BELAY, V.YE., VASILYEV, P.V.
COUNTRY OF INFO--USSR
SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P.
77-79
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BIOLOGIC ACCELERATION EFFECT, DRUG TREATMENT, HYPOXIA, SPACE
MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1973
STEP NO--UR/0453/70/004/000/0077/0079
CIRC ACCESSION NO--AP0120616
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120616

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE EFFECTS OF PHENAMINE, SIONOCARB. STRYCHNINE, SECURININE, ARALESIDE, TRIOXAZINE, BANACTISINE AND CHLORDIAZEPOXIDE INJECTIONS ON THE RESISTANCE OF 1684 WHITE MICE AND 116 WHITE RATS TO G ACCELERATIONS AND TO ACUTE HYPOXIA AT ATMOSPHERIC PRESSURES CORRESPONDING TO ALTITUDES OF 10.5-11 KM. THE FLOATING CAPABILITY OF EXPERIMENTAL ANIMALS WITH ATTACHED WEIGHTS WAS USED AS A CRITERION OF THEIR PHYSICAL CONDITION IN SOME OF THE EXPERIMENTS. THE DIVERSE EFFECTS OF THESE INJECTIONS ON THE RESISTANCE OF MICE AND RATS TO DIFFERENT STRESSES ARE INDICATED. THUS, THE ACCELERATION AND HYPOXIA RESISTANCE OF EXPERIMENTAL ANIMALS WERE INCREASED SUBSTANTIALLY BUT THEIR PHYSICAL CONDITION WAS WEAKENED AFTER CHLORDIAZEPOXIDE INJECTIONS.

UNCLASSIFIED

1/2 029
UNCLASSIFIED
TITLE--EFFECT OF SOME DRUGS ON ANIMAL TOLERANCE TO EXTREME STRESS -U-
AUTHOR--BELAY, V.YE., VASILYEV, P.V., GLOD, G.D.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, KOSMICHESKAYA BIOLOGIYA I MEDITSINA, RUSSIAN, VOL 4, NO 1,
JANUARY FEBRUARY 1970, PP 77-79
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HYPOXIA, ACCELERATION STRESS, ALTITUDE CHAMBER, SPACE
MEDICINE, NERVOUS SYSTEM DRUG
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1986/0753
STEP NO--UR/0453/70/004/001/0077/0079
CIRC ACCESSION NO--AP0102718
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102718

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. WE MADE A COMPARATIVE STUDY OF THE EFFECT OF SOME NEUROTROPHIC DRUGS WHICH HAVE DIFFERENT EFFECTS ON ANIMAL TOLERANCE TO ACUTE HYPOXIC HYPOXIA, PROLONGED TRANSVERSE ACCELERATIONS AND MAXIMUM PHYSICAL LOADS. THE EXPERIMENTS WERE MADE ON 1,534 ALBINO MICE AND 116 WHITE RATS. THE ACCELERATIONS WERE ON A CENTRIFUGE WITH A ROTATION RADIUS OF 4.25 M AND HYPOXIA WAS PRODUCED IN A PRESSURE CHAMBER WITH ASCENT TO AN "ALTITUDE" OF 10.5-11 KM. AS THE MODEL OF MAXIMUM PHYSICAL LOAD WE USED THE METHOD OF FORCED SWIMMING OF ANIMALS (AS DESCRIBED BY I. I. BREKHMAN) WITH AN ADDITIONAL WEIGHT (10 PERCENT OF THE BODY WEIGHT) UNTIL THEY DROWNED. WE DETERMINED THE DEATH RATE FROM ACCELERATIONS OF 42 G LASTING VARIOUS TIMES, LIFETIME "ALOFT" AND THE LENGTH OF TIME WHICH THE ANIMALS SWAM. THESE DATA WERE STATISTICALLY ANALYZED.

UNCLASSIFIED

USSR

UDC 620.193.23

ZAKHAROV, YU. V., MYASNIKOV, YU. F., UL'YANIN, YE. A., VASIL'YEV, P. YE.,
and USTIYENKO, M. YU., Central Scientific Research Institute of Ferrous
Metallurgy imeni I. P. Bardin

"Investigation of High-Strength Steels and Alloys for Work in Humid Hydrogen
Sulfide"

Moscow, Zashchita Metallov, Vol 9, No 1, Jan-Feb 73, pp 61-63

Abstract: The tendency to failure under the action of hydrogen sulfide was investigated on 40Kh and 65G structural steels. 4Kh13 and Kh16N7M2Yu stainless steel subjected to martensitic transformation, and dispersion-hardened KhN40MDTYu (EP543) austenitic steel. Cylindrical specimens of 40Kh and 4Kh13 steels and EP-543 alloy were over a period of one month. The test results revealed that 40Kh and 4Kh13 steels in the hardened state ($R_c > 30$) are highly inclined to cracking in the presence of humid hydrogen sulfide, whereas the EP-543 alloy is stable. Laboratory tests under similar conditions revealed a high stability of austenitic dispersion-hardened EI437B alloy on a nickel base. One figure, twelve bibliographic references.

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1/2 033
UNCLASSIFIED
PROCESSING DATE--20NOV70
TITLE--LAPAROSCOPIC ROENTGENOTELEVISION CHOLECYSTOCHOLANGIOSCOPY -U-
AUTHOR--(66)-KILONOV, G.B., VASILYEV, R.KH., SUKHOMLINA, R.A.
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 6, PP 107-114
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, ANGIOGRAPHY, RADIOGRAPHY, TV SYSTEM,
DIAGNOSTIC MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1774
STEP NO--UR/0531/70/000/006/0107/0114
CIRC ACCESSION NO--AP0129142
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0122142

ABSTRACT/EXTRACT--(U) GP-D- ABSTRACT. LAPAROSCOPIC ROENTGENOTELEVISION CHOLANGIOSCOPY IS A VERY VALUABLE METHOD OF INVESTIGATION WHICH ENABLES, APART FROM VISUAL STUDY, TO OBTAIN MATERIAL FOR PATHOMORPHOLOGICAL INVESTIGATION. LAPAROSCOPIC ROENTGENOTELEVISION CHOLANGIOSCOPY MAKES IT POSSIBLE TO OBTAIN A DISTINCT AND CONTRAST IMAGE OF THE BILIARY TRACT, NOTWITHSTANDING THE FACT THAT THE INVESTIGATION IS CARRIED OUT IN A DAY LIGHT ROOM. THE ABOVE METHOD HELPS TO OBSERVE ALL THE PHASES OF CONTRAST MEDIUM PASSAGE ALONG THE BILE DUCTS. ONE COULD DISTINCTLY SEE THE CONTRACTILE FUNCTION OF THE GALLBLADDER, PERISTALSIS OF THE DUCTS, DEGREE OF THEIR PATENCY, AS WELL AS THE CHARACTER AND LOCALIZATION OF PATHOLOGICAL CHANGES BEFORE THE OPERATIVE INTERVENTION. THE REFERRED TO TECHNIQUE HAS GREAT DIAGNOSTIC POSSIBILITIES, IT IS TECHNICALLY SIMPLE AND SAFE FOR THE PATIENT. IT IS INDICATED IN ALL CASES WHEN OTHER SIMPLER TECHNIQUES COULD NOT REVEAL THE NATURE OF LESION IN THE BILE DUCTS. LAPAROSCOPIC ROENTGENOTELEVISION CHOLANGIOSCOPY AND CHOLANGIOGRAPHY IS A POLYVALENT METHOD OF INVESTIGATION, WHICH INCLUDES LAPAROSCOPY, TAKING OF THE MATERIAL FOR PATHOMORPHOLOGICAL STUDY AND ROENTGENCONTRAST INVESTIGATION OF THE BILIARY TRACT WITH THE AID OF THE TELEVISION SCREEN.

FACILITY: OTDELENIYA KHIRURGII PECHENI I ZHELGHNYKH PUTY I RENTGENOLOGII NII KLINICHESKOY I EKSPERIMENTAL'NOY KHIRURGII, MOSKVA.

UNCLASSIFIED

USSR

UDC 51:621.391

VASIL'YEV, S. I., DUKHANIN, V. M.

"Method of Coding of One Class of Phase Start Signals"

Teoriya i Praktika Ispol'z. Sredstv Tekhn. Kibernetiki. Kn. 1 [Theory and Practice of the Use of Engineering Cybernetics Equipment. Book 1 -- Collection of Works], Novosibirsk, 1970(1971), pp 40-45, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V647 by Yu. Pyatoshin).

Translation: Some k-mary codes with good autocorrelation properties are suggested for transmission of synchronization signals in communications lines.

1/3 029

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--ANALYSIS OF THE ELASTIC AND INELASTIC SCATTERING OF 6-MEV PROTONS
ON NUCLEI OF AVERAGE ATOMIC WEIGHT -U-

AUTHOR--(05)-ANTROPOV, A.YE., VASILYEV, S.I., ZARUBIN, P.P., ORLOV, B.N.,
PLAVKO, A.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 400-8

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PROTON SCATTERING, ELASTIC SCATTERING, INELASTIC SCATTERING,
WAVE MECHANICS, NUCLEAR MODEL, SPIN ORBIT COUPLING, NICKEL ISOTOPE,
ANGULAR DISTRIBUTION, SCATTERING CROSS SECTION, COMPOUND NUCLEUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0245

STEP NO--UR/0048/70/034/002/0400/0408

CIRC ACCESSION NO--AP0105320

UNCLASSIFIED

2/3 029

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105320

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SCATTER OF P WITH ENERGIES 3-20 MEV WAS STUDIED TO DET. LIMITS OF APPLICABILITY OF THE DISTORTED WAVE METHOD DURING THE P SCATTERING ON PRIME58 NEGATIVE64 NI NUCLEI, TO ELUCIDATE EXPTL. RESULTS ACHIEVED BY THE 6-MEV SCATTERING ON PRIME59 CU, PRIME58 NEGATIVE64 NI, PRIME63,65 CU NUCLEI BASED UPON 2 DISTORTED WAVE THEORIES AND THE HAUSER-FESCHBACK THEORY, NEGLECTING THE EFFECT OF INTERFERENCES BETWEEN DIRECT AND COMPD. SCATTERINGS. DURING THE APPLICATION OF THE OPTICAL MODEL AND THE DISTORTED WAVE MODEL, SPIN ORBITAL INTERACTIONS WERE NEGLECTED. WHEN CONSIDERING THE VOL. ABSORPTION ONLY, A MARKED DISAGREEMENT WAS FOUND BETWEEN EXPTL. AND THEORETICAL RESULTS IN DETG. THE ELASTIC SCATTERING CROSS SECTION. THE DESIRED RESULTS WERE ACHIEVED ONLY BY SELECTING SUITABLE PARAMETERS FOR THE OPTICAL MODEL. IN PRIME58,60 NI NUCLEI, A STRONG DEPENDENCE WAS VERIFIED FOR THE ANGLE DISTRIBUTION OF SCATTERED P ON THEIR ENERGIES. THE DISTORTED WAVE MODEL ALSO PROPERLY DESCRIBES THE INELASTIC SCATTERING OF 6-MEV P ON PRIME64 NI NUCLEI BY USING PARAMETERS OF THE OPTICAL POTENTIAL OBTAINED BY THE ANAL. OF THE ELASTIC SCATTERING. THE PRESENCE OF COMPD. PROCESSES WAS VERIFIED. THIS EFFECT MUST BE TAKEN INTO ACCOUNT BY VARYING PARAMETERS OF THE OPTICAL POTENTIAL. THE SHAPE OF THE ANGLE DISTRIBUTION FOR P WITH ENERGIES OF LARGER THAN 10 MEV REMAINS ESSENTIALLY UNCHANGED; HOWEVER, THE CROSS SECTIONS ARE STRONGLY INCREASED DOWING TO WINGS OF A WIDE RESONANCE MAX. WHOSE FORMATION IS CONNECTED WITH AN ACTION OF THE COMPETITIVE P AND N CHANNELS DURING THE DECAY OF THE COMPD. NUCLEUS.

UNCLASSIFIED

3/3 029

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105320
ABSTRACT/EXTRACT--THE ANAL. OF THE INELASTIC SCATTERING BASED UPON THE
HAUSSER-FESCHBACK THEORY SHOWED THAT FOR ACHIEVING DESIRED SPECTROSCOPIC
DATA ONE HAS TO INCREASE THE PRECISION OF MEASUREMENT OF THE
DIFFERENTIAL CROSS SECTIONS.

UNCLASSIFIED

USSR

VASIL'YEV, S. K.

"Determination of Optimal Control System on the Basis of Maximum Probability That the Error and Its Derivative Do Not Exceed Fixed Tolerances"

Moscow, Nelineynyye i Optimal'nyye Sistemy, 1971, pp 137-145.

Abstract: A method is presented for determination of the optimal weight function of a linear system, synthesized according to a statistical criterion suggested by the author, providing the maximum probability that the error of the system and its derivative will not exceed fixed tolerances. The Euler control is for the case when the useful signal is an unstable random function, while noise is fixed by a correlation function. The application of the method is illustrated by an example.

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USSR

BAKIYEV, S. A., BASKOVA, K. A., VASIL'YEV, S. S., MOKHSEN, M. A., SOROKIN, A. A., CHUGAY, T. V., Institute of Nuclear Physics of Moscow State University

"Concerning 0^+ Levels in the Xe^{130} Nucleus"

Moscow, Yadernaya Fizika, Vol 18, No 2, Aug 73, pp 233-238

Abstract: The β -spectrum of Cs^{130} was measured on a spectrometer with an Si(Li) detector. A peak identified as the K-line of conversion electrons of the E0 transition with energy of 2016 kev was observed in the region of the upper boundary of the β -spectrum at an electron energy of about 1982 kev. On the basis of this level, quantum characteristics $I^\pi = 0^+$ are assigned to the 2016 kev level of Xe^{130} .

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USSR

PANTELEYEV, V. V., RAZINOVA, S. M., VASIL'YEV, S. S.

"Temperature Field in a Discharge Column Bounded by Walls"

Moscow, Khimiya i Fizika Nizkoterperaturnoy Plazmy, Moscow University Press, 1971, pp 139-142

Abstract: Rotational gas temperature distribution is spectrometrically determined for a discharge in air in an enclosed tube. The ISP-51 spectrograph was used with a camera having a focal length of 270 mm. The intensity of the rotational lines was also determined photoelectrically, using the FEP-1 attachment. A discharge tube with an inside radius of 0.2 cm was used. The results agree with data in the literature obtained with a high-dispersion spectrograph. Three figures, one table, bibliography of five titles.

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USSR

UDC 535.376

AKISHIN, A. I., BESSONOVA, T. S., and VASIL'YEV, S. S.

"Electron and Proton Radioluminescence of Optical Glasses"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 15, No 3, Sep 71, pp 471-475

Abstract: The authors discuss the results of investigating the different characteristics of the cross section of multicomponent silicate optical glasses by exciting them with electrons and protons. They established that the luminous flux of the radioluminescence of the optical glasses depends linearly on the intensity of the ionizing radiation. The energy yield of luminescence during proton excitation is lower than the energy yield during electron excitation. The basic components of the glasses influencing their luminescence capacity are the oxides of silicon, barium, and lead. They found that with a lengthy electron and proton irradiation of glasses not containing lead oxide an increase takes place in the luminescence yield. The luminescence yield of glasses containing lead oxide remains constant in the irradiation process. At high temperatures, for glasses irradiated by large doses in which there is no lead oxide, thermoluminescence is generated. In all glasses containing lead oxide no thermoluminescence is observed regardless of the degree of their darkening. The radioluminescence spectra of all the glasses, in spite of the formation of color centers and growth in luminescence capacity,

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USSR

AKISHIN, A. I., et al., Zhurnal Prikladnoy Spektroskopii, Vol 15, No 3,
Sep 71, pp 471-475

are continuous and do no change under lengthy irradiation. The article contains 2 illustrations and 2 tables.

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- 99 -

1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--DETERMINATION OF ISOTOPE CONTENT OF EU AND IR BY USING THERMAL
NEUTRON METHOD -U-
AUTHOR-(04)-VASILYEV, S.S., VELYUS, L.M., KORZH, P.D., FOMENKO, V.T.
COUNTRY OF INFO--USSR
SOURCE--AT. ENERG. (USSR); 28: 65-7 (JAN 1970) ✓
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--THERMAL NEUTRON, NEUTRON ABSORPTION, RADIATION INTENSITY,
EUROPIUM ISOTOPE, IRIDIUM ISOTOPE, QUANTITATIVE ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1979/1829 STEP NO--UR/0089/70/028/000/0065/0067
CIRC ACCESSION NO--AP0048132
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0048132

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A THERMAL NEUTRON ABSORPTION METHOD WAS DEVELOPED FOR THE DETERMINATION OF EUROPIUM AND IRIDIUM ISOTOPES. GRAPHS FOR DETERMINING PRIME151 EU AND PRIME191 IR SHOW RELATIVE INTENSITIES OF NEUTRON PASSAGE THROUGH THE SPECIMENS VS ISOTOPIC CONCENTRATION. THE ABSOLUTE STANDARD ERROR FOR DETERMINATION OF PRIME151 EU WAS 0.22 AND 0.43PERCENT WITH ISOTOPE CONCENTRATIONS OF 0 TO 30 AND 30 TO 100PERCENT, RESPECTIVELY, AND FOR PRIME191 IR IT WAS 0.85PERCENT WITH CONCENTRATIONS OF 5.7 TO 100PERCENT. DURATION OF THE ANALYSIS WAS 30 MIN.

UNCLASSIFIED

USSR

UDC 621.313.333:538.4

VASIL'YEV, S. V.

"Electromagnetic Pumps with Side Buses"

Riga, Magnitnaya Gidrodinamika, No 3, Jul-Sep 72, pp 83-92.

Abstract: An earlier work by the same author produced formulas describing the distribution of the magnetic field and induced currents in the secondary circuit of flat linear induction pumps with side buses. Here, these results are used to analyze the distribution of electromagnetic forces, Joule losses and to find expressions for the power transmitted to the secondary circuit. The electromagnetic field equations used were produced in a plane-parallel statement considering the exponential attenuation of the primary field and magnetic conductivity in the area of the buses. The theoretical dependences produced are analyzed numerically. It is noted that as the channel expands, when the buses are replaced by liquid metal, the power transmitted to the secondary circuit may rise significantly. Calculation curves are produced to select the width of the layer of metal for which the electromagnetic pressure or transmitted power will reach the maximum with fixed inductor width. It is determined that the width of the side buses should be selected considering the influence of currents induced in the buses. The demagnetiz-
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USSR

UDC 621.313.333:538.4

VASIL'YEV, S. V., Riga, Magnitnaya Gidrodinamika, No 3, Jul-Sep 72, pp 83-92.

ing effect of the natural currents of the buses, which may cause a decrease in the contribution of the buses to the head developed, is important. The theoretical results are compared with experimental data produced by measurement of forces on metal plates. Satisfactory agreement is produced.

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1/2 017
UNCLASSIFIED
TITLE--IMMEDIATE RESULTS OF TREATMENT WITH PENICILLIN AND BISMUTH DRUGS OF
PATIENTS WITH CONTAGIOUS FORMS OF SYPHILIS -U-
AUTHOR--(02)--VASILYEV, T.V., GRACHEVA, G.K.
PROCESSING DATE--13NOV70
COUNTRY OF INFO--USSR
SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 4, PP 50-55
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PENICILLIN, VENEREAL DISEASE, BISMUTH COMPOUND, BLOOD SERUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/0937
STEP NO--UR/0206/70/000/004/0050/0055
CIRC ACCESSION NO--AP0109094
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS OBSERVED 106 PATIENTS WITH CONTAGIOUS FORMS OF SYPHILIS WHO WERE TREATED SIMULTANEOUSLY WITH PENICILLIN AND BISMUTH DRUGS (BIYOQUINOL, BISMOVEROL). GOOD TOLERABILITY OF THE TREATMENT, MORE RAPID REGRESSION OF SYPHILIDS, MORE RAPID NEGATIVATION OF SEROLOGICAL TESTS OR A REDUCTION OF THE TITER OF REAGINS WERE OBSERVED. IN DETERMINATIONS OF CONCENTRATION OF THE ANTIBIOTIC IN THE BLOOD SERUM OF PATIENTS RECEIVING PENICILLIN SIMULTANEOUSLY WITH BIYOQUINOL IT WAS FOUND TO PERSIST AT A THERAPEUTIC LEVEL (0.06 UN-ML) BY THE END OF THE THIRD HOUR AFTER NEXT INJECTION. THIS METHOD OF TREATMENT SHORTENS THE PERIOD OF HOSPITALIZATION BY 2-3 WEEKS AND CURTAILS THE TIME OF TREATMENT. FACILITY: OTDEL SIFILIDCLOGII TSENTRAL'NOGO N I KOZHNO VENEROLOG, INSTITUTA MINISTERSTVA ZDRAVOUKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

1/2 020
TITLE--ON THE CLINICAL PICTURE OF MONDOR'S DISEASE -U-
AUTHOR--(04)-VASILYEV, T.V., SHIBANOV, V.A., OVSYANNIKOV, L.M.,
TOPOROVSKIY, L.M.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 5, PP 68-71
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--REPRODUCTIVE SYSTEM, GENITOURINARY SYSTEM DISEASE, LESION,
VENEREAL DISEASE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/2048
CIRC ACCESSION NO--AP0122277
STEP NO--UR/0206/70/000/005/0068/0071
UNCLASSIFIED